Standard Operating Procedure for Kidney Biopsy Collection

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Internal Medicine IV
Nephrology and Hypertension

Purpose

This protocol describes the required procedure for handling zero-kidney biopsy tissue collected for 1) RNA isolation and 2) pathology workup of formalin-fixed tissue.

Scope

This procedural format is utilized by the contributing centres to the project `Functional Significance of Changes in Genome Wide Gene Expression Profiles Associated with Renal Aging´. Adherence to the protocol will maximize the quantity and quality of RNA available in human kidney biopsy samples collected for this project.

Materials

RNA*later* tissue storage and RNA stabilization solution (Sigma Aldrich)
4% Formalin
Sterile collection tubes – 2 tubes per biopsy (1 RNA*later* and 1 formalin)

Procedure

- Store RNA*later* solution at room temperature.

If any precipitate is visible heat solution to 37^{o}C and agitate to redissolve.

- Prepare 2 collection tubes per biopsy. Tube 1: Add 1 ml RNA*later* solution in and label clearly. Tube 2: Add 1 ml formalin and label clearly.

The tube should contain a volume of RNA*later* solution 5-10 times the volume of the biopsy. In most cases 1 ml is sufficient.

- Collect the tissue sample (approx. 3x3x3 mm) and dissect into two pieces. Immediatley submerge one tissue segment in RNAlater, transfer the second piece to the tube with formalin.

It is of crucial importance that the kidney biopsy is transferred to the RNA*later* solution as rapidly as possible. Degradation of RNA begins as soon as tissue perfusion ceases, therefore to maximise the quality and amount of RNA recovered the tissue must be submerged in RNA*later* solution immediatley following biopsy collection.

- Refrigerate tubes containing biopsy samples.

Do not freeze biopsy samples in RNA*later* on the same day as collection. Samples should be kept at 4^{o}C overnight to allow the RNA*later* solution to completely penetrate the tissue.
The following day samples should be transferred to a freezer (-20^{o}C) for storage.

Sample Transport

When samples are sent for evaluation to Innsbruck cooled packaging is sufficient.

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